EARTH SATELLITE CORPORATION
(EarthSat)

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ERTS REPORT I/2

E72-10019
CR-127743

National Aeronautics & Space Administration
Goddard Space Flight Center
Greenbelt Road
Greenbelt, Maryland 20771

ATTN: Distribution

SUB: Type I Progress Report "Investigation To Improve Menhaden Fishery Prediction." (SR 258) Dr. Paul M. Maughan, PI. (PR 507), Contract NAS 5-21743.

REPORTING PERIOD: 1 June 1972 to 31 July 1972

Gentlemen:

This Type I Progress Report is submitted in compliance with Article II Item 3 of the subject contract.

Collection of ground truth data has proceeded in anticipation of receipt of ERTS-A data. Work accomplished between mid-June and mid-July has been summarized in an ERTS-A Status Report distributed to individuals actively working on the subject contract. This Status Report is attached as Exhibit A.

Field operations under the guidance of O. Ray Temple, headquartered at Escatawpa, Mississippi, are fully operational at this time. Two members of the field party staff are operating in Mississippi Sound from "Calibration Vessels" supplied to the ERTS-A study effort by the industry members of NFMOA. Field party staff collect data in conjunction with the normal fishing operations from these vessels.

Personnel actions during the reporting period include the addition of Glennis Penton, Field Technician, who will be stationed at Escatawpa, Mississippi. Mr. Terrell Roberts, Field Technician, left the program as of July 14. Dr. Allan Marmelstein, Test Site Coordinator, will be temporarily transferred to the field operations for three months beginning September 1. Dr. Marmelstein will be working with NFMOA/EarthSat, NASA-ERL, and NOAA-NMFS personnel in data reduction and analysis.

No published articles and/or papers, etc., were released during the Reporting Period. Because no ERTS imagery was received during the Reporting Period, an ERTS Image Descriptor Form is not included as part of this report.

Sincerely,

EARTH SATELLITE CORPORATION

Paul M. Maughan
Principal Investigator

E72-10019
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EXHIBIT A

ERTS-A STATUS REPORT
For Period 6-17-72 to 7-16-72
NFMOA/EARTHSAT MENHADEN INVESTIGATION SR 258

P. Maughan, Principal Investigator
(E72-10019) INVESTIGATION TO IMPROVE MENHADEN FISHERY PREDICTION Progress Report, 1 Jun. - 31 Jul. 1972 P.M. Maughan (Earth Satellite Corp.) 7 Aug. 1972 2 p CSCL 08A G3/13

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INTRODUCTION

This is the second ERTS-A Status Report on the progress of the NFMOA/EarthSat Menhaden ERTS Investigation.

The ERTS-A spacecraft was shipped from General Electric's Valley Forge facility to the western test range at Vandenberg Air Force Base on 7 July and the launch preparation cycle has begun. As of 10 July, launch is scheduled for 1:54 p.m. eastern daylight time on 21 July.

We have added an additional Field Technician, Glennis Penton, who will be stationed at Moss Point, Mississippi and participate in data collection from the fishing vessels.

PROGRESS TO DATE

Menhaden fishing for the first half of the reporting period was slow due largely to wind and sea conditions which hampered location and capture. Damage to purse boats and ancillary gear was common with much time lost due to accidents and repairs.

The prevailing thunderstorm activity and winds resulted in day-by-day postponement of the "Mini" Main Day originally scheduled for 27 June. Following final cancellation on 30 June, the mission was re-scheduled and carried out on 6 July.

Overflights on the "Mini" Main Day were provided by NASA's C-130 aircraft which carried very sophisticated instrumentation to measure ocean color and temperature. Supplemental aircraft data were provided by the MTF/ERL Beachcraft, which also was operating in the "Mini" Main Day test area.

The surface data collected from the industry "calibration" vessels will provide the "sea truth" for the "Mini" Main Day. Flight lines are adjusted to take advantage of the presence of the fishing fleet, so that full coverage is provided of the area where the major fishing activity occurred. Last minute changes in flight line schedules are relayed from Ray Temple at the NFMOA/EarthSat onsite trailer to MTF the morning of the overflights and the mission is scheduled to concentrate in the area where fishing activity is anticipated. In this manner, more concurrent data is available during the time of aircraft overflight.

Weekly overflights by MTF/ERL aircraft (and NMFS low-light level TV equipped aircraft during periods where light from the moon is of no consequence) are scheduled on Tuesdays of each week beginning 6 July and continuing through the end of October. The MTF/ERL aircraft will carry photographic and temperature sensing devices, and will concentrate sampling in the vicinity of the fishing activity.

Beginning on 11 June, EarthSat personnel have been flying with industry spotter aircraft on each Sunday patrol and logging data verbally obtained from the spotter pilots. Because of the scanty fishing operations that were occurring during the latter part of June, few schools, or probable schools, were sighted. However, on 2 July, Dr. Maughan flew with the patrol aircraft and was able to record a large number of schools or probable schools of menhaden as observed by the spotter pilot. Patrol aircraft covered the entire Mississippi Sound during the two hour flight. Information obtained from these flights is going to be very helpful in providing baseline data for the study.

Data acquisition from the calibration vessels has progressed very smoothly. During the week of 6 July we doubled our data base due to the increased level and intensity of the fishing effort.

A third calibration vessel was added from the Smith operations. Mr. Glennis Penton will be assigned to the Smith vessel for fulltime data acquisition.

PLANNED ACTIVITIES

It is anticipated that as the data base enlarges preliminary correlations on the surface data will be made. These will be in the form of two-dimensional matrices and isoline contours of data such as catch versus location, etc. In addition, we are planning to request hard copy imagery from low-light level TV, photographic, and mechanical scanner systems currently in use by MTF/ERL and NASA aircraft. As information becomes available and processed, briefings for interested personnel from the NFMOA participants will be scheduled.

The first Main Day is scheduled for 15 August, plus or minus ERTS-A overpass time. Following successful ERTS-A launch it is anticipated that the sensors will be turned on the first two days, orbit calculations will be available at the end of the fifth day, and data will be acquired over various test sites beginning about the seventh day. If the launch goes on July 21 as scheduled, first satellite overflight of the Mississippi Sound test area will be approximately 12 to 13 days after launch. This would put it over the test site in the first week of August. Adjustments to that schedule will be made as needed.

The second Main Day will be scheduled 15 September, plus or minus ERTS overpass day.